

Fig. 1A

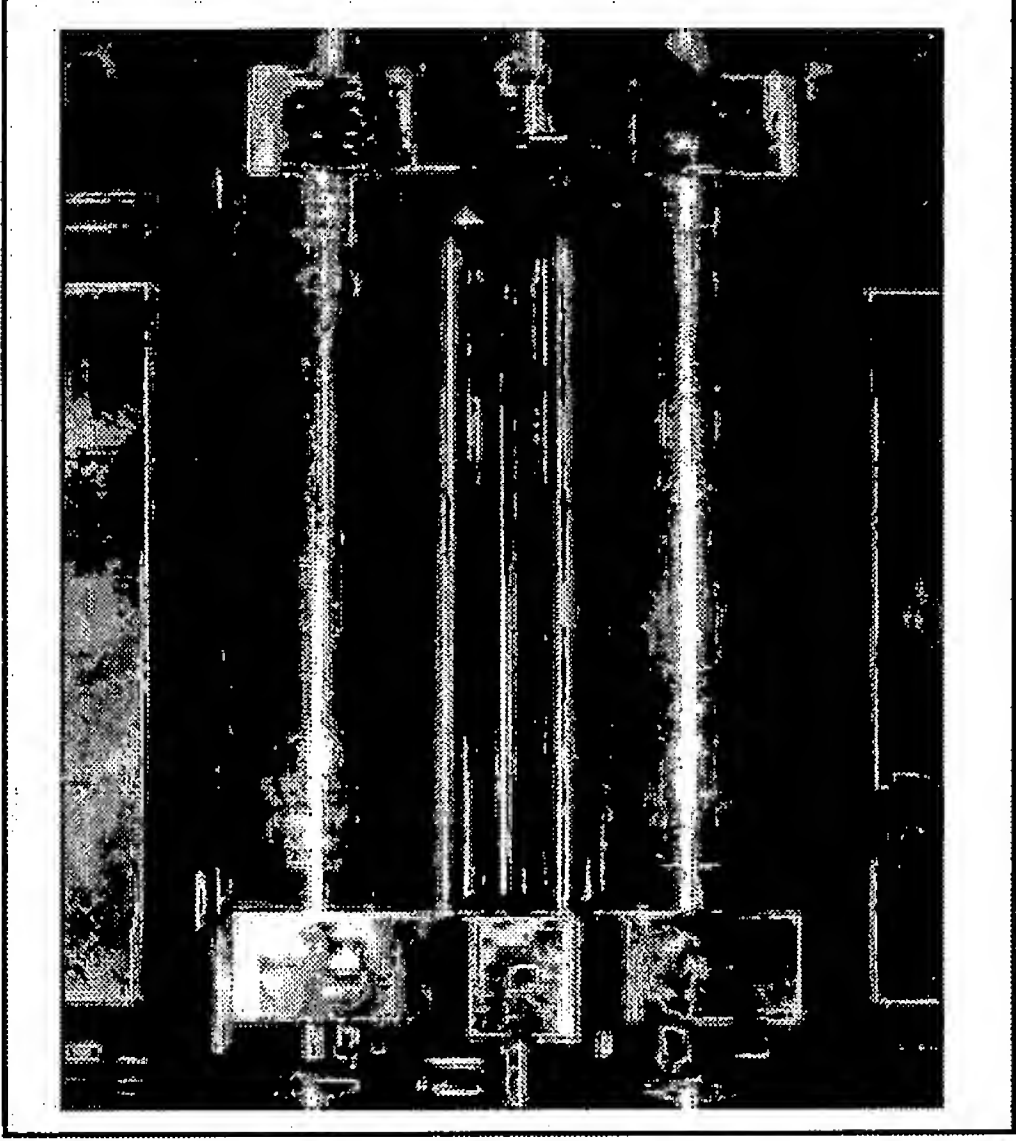


Fig. 1B

High-Power Open Rolls (Adjustable at Low Temperature Range)



Fig. 2A

Outer View

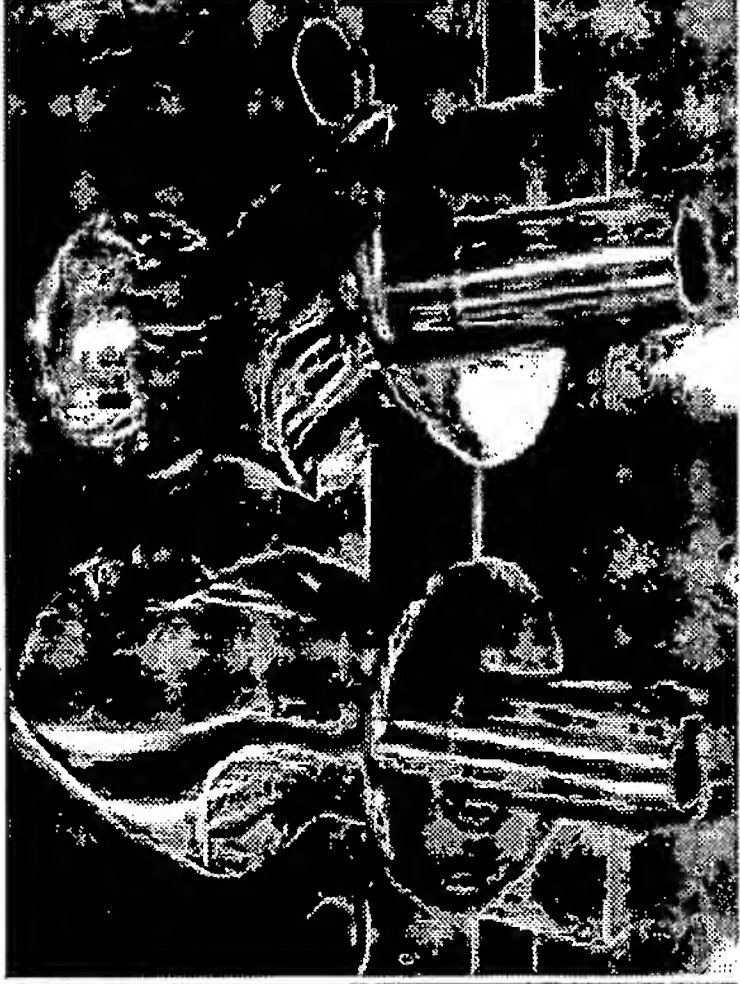


Fig. 2B

Rotors

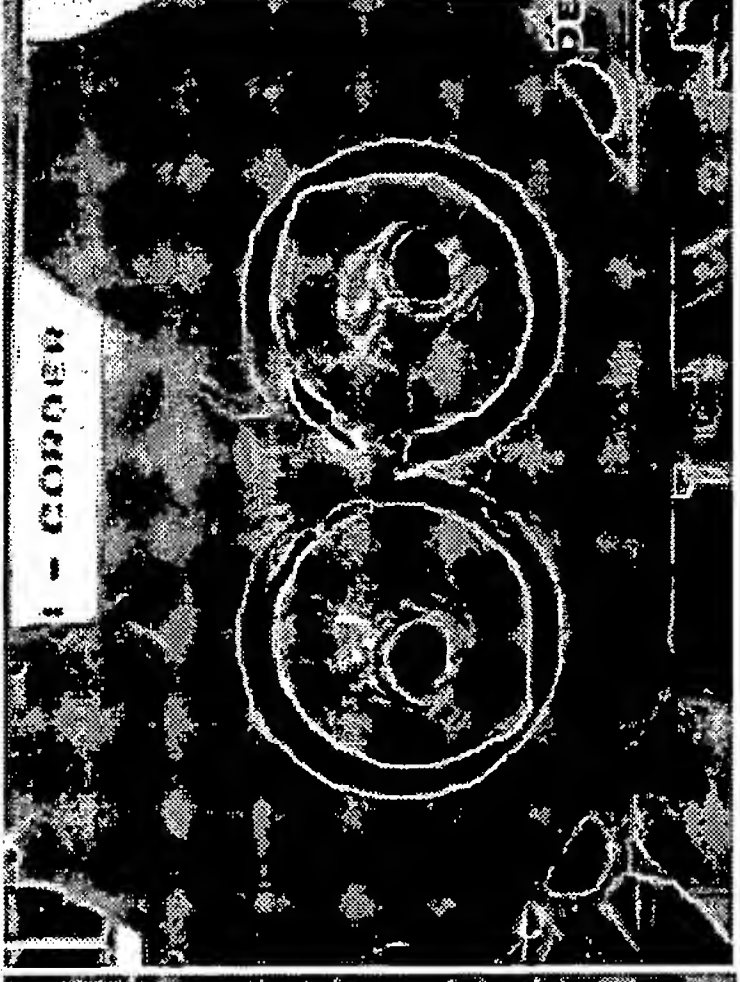


Fig. 2C

Inner Chambers

Labo Plastmill: Brabender Plasticoder PL-2000 (Banbury Type)

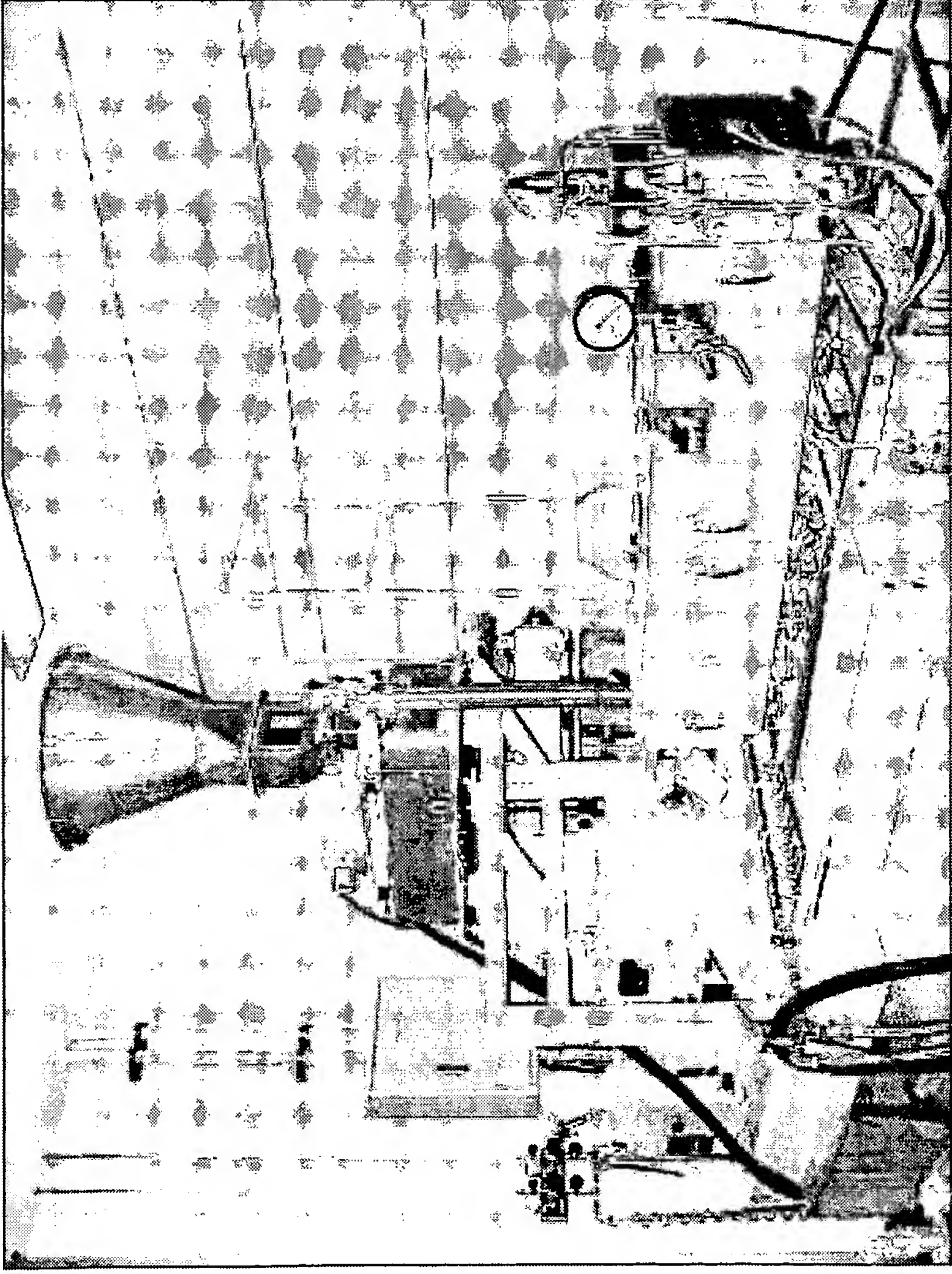


Fig. 3A

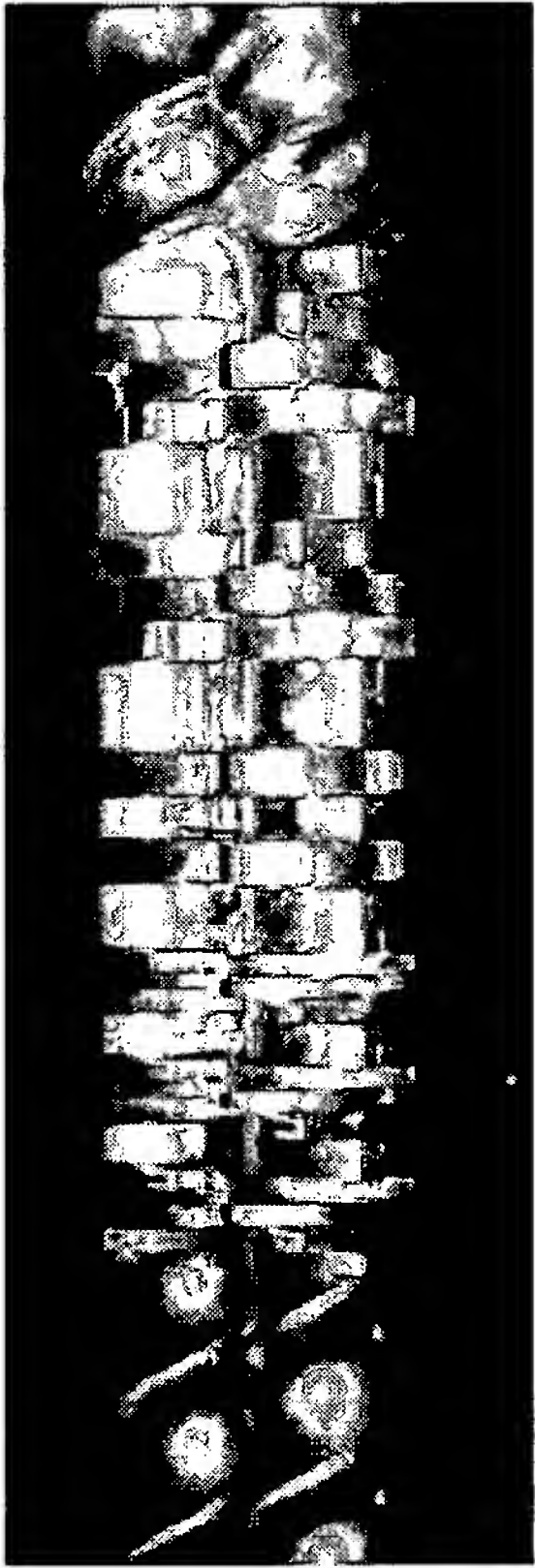


Fig. 3B

Overview of TEX30  $\alpha$  and Screw in Twin Screw Extruder (The Japan Steel Works, Ltd.)  
 Test Site: Industrial Technology Center of Okayama Prefecture



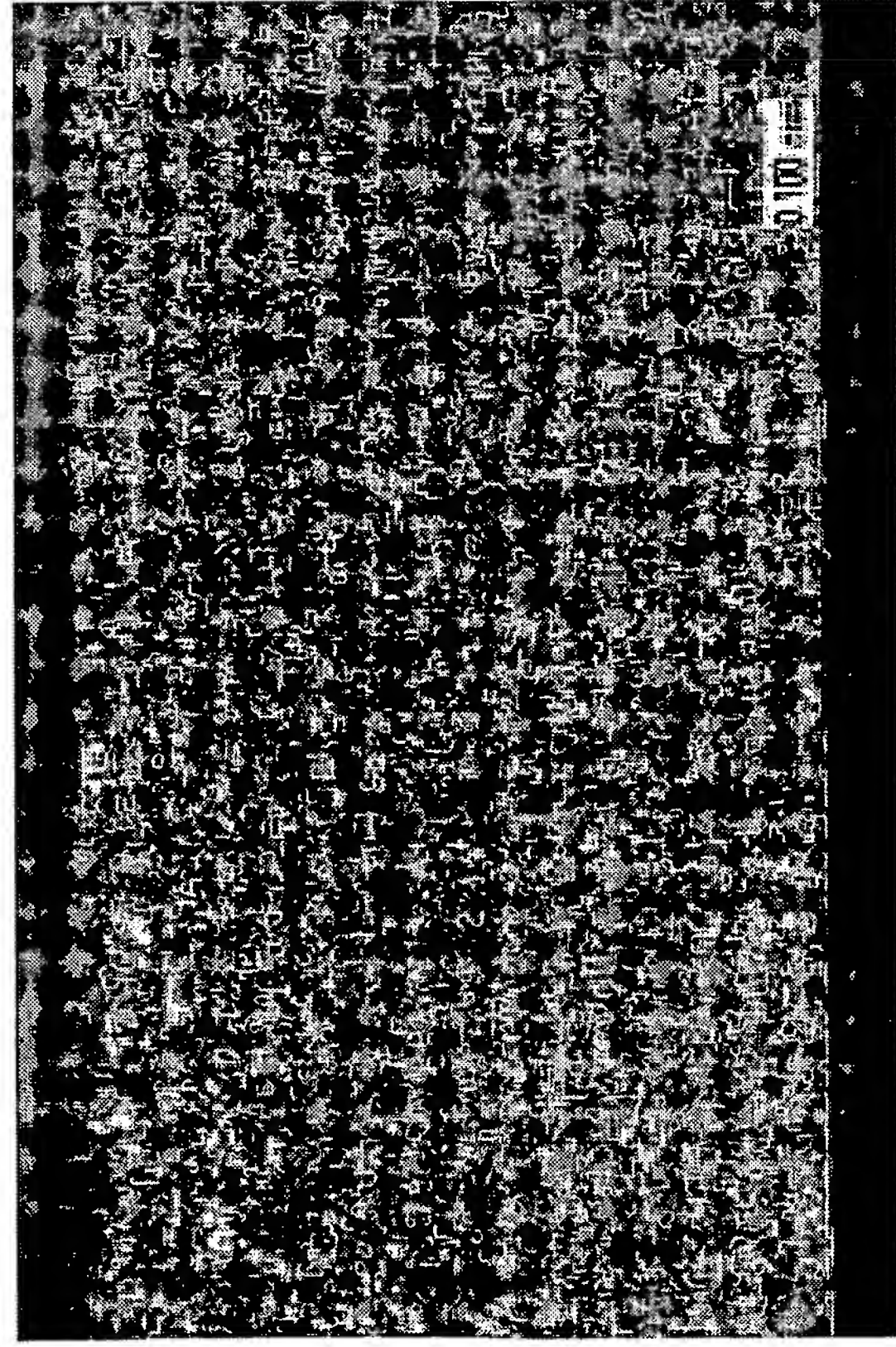


Fig. 4A1

Method A: Overview of Mix Sheet (Optical Microscopic Images; White Scale=100μm)  
Macro Uniform Dispersion



(A)SEM

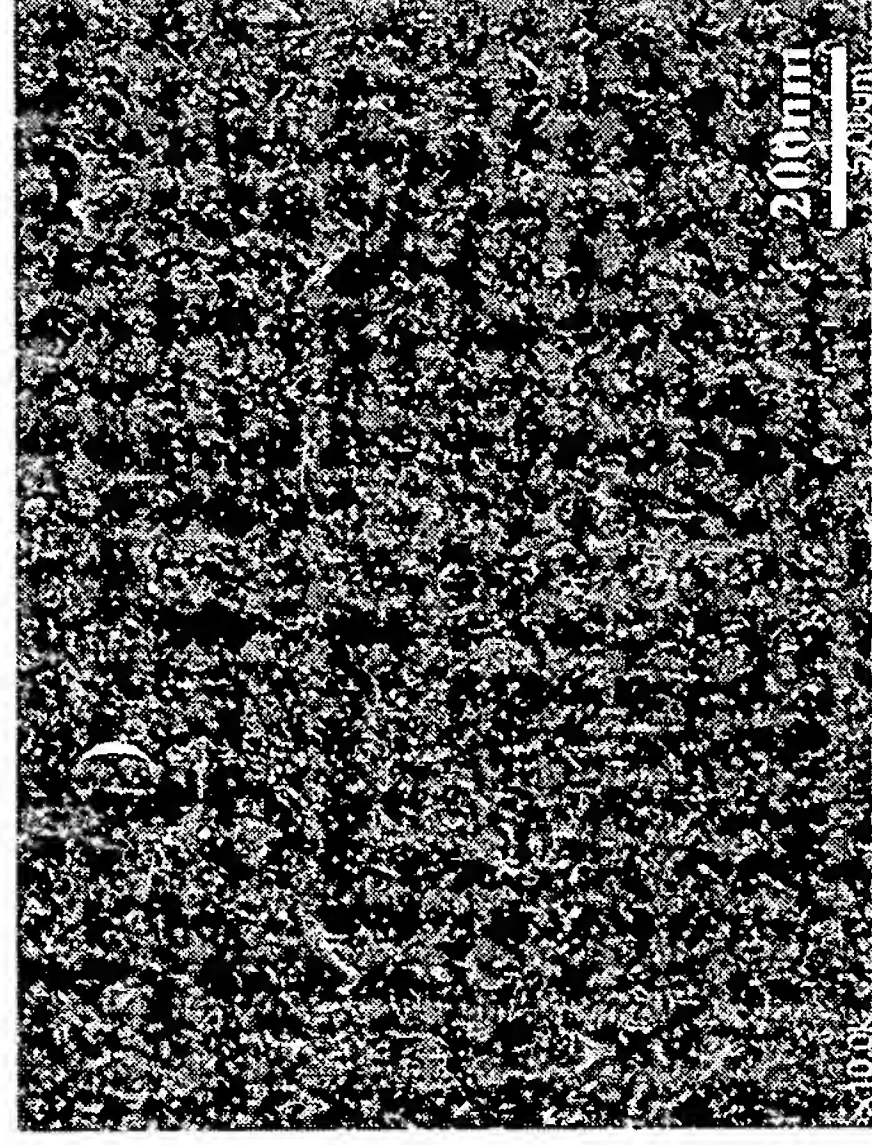


Fig. 4A2

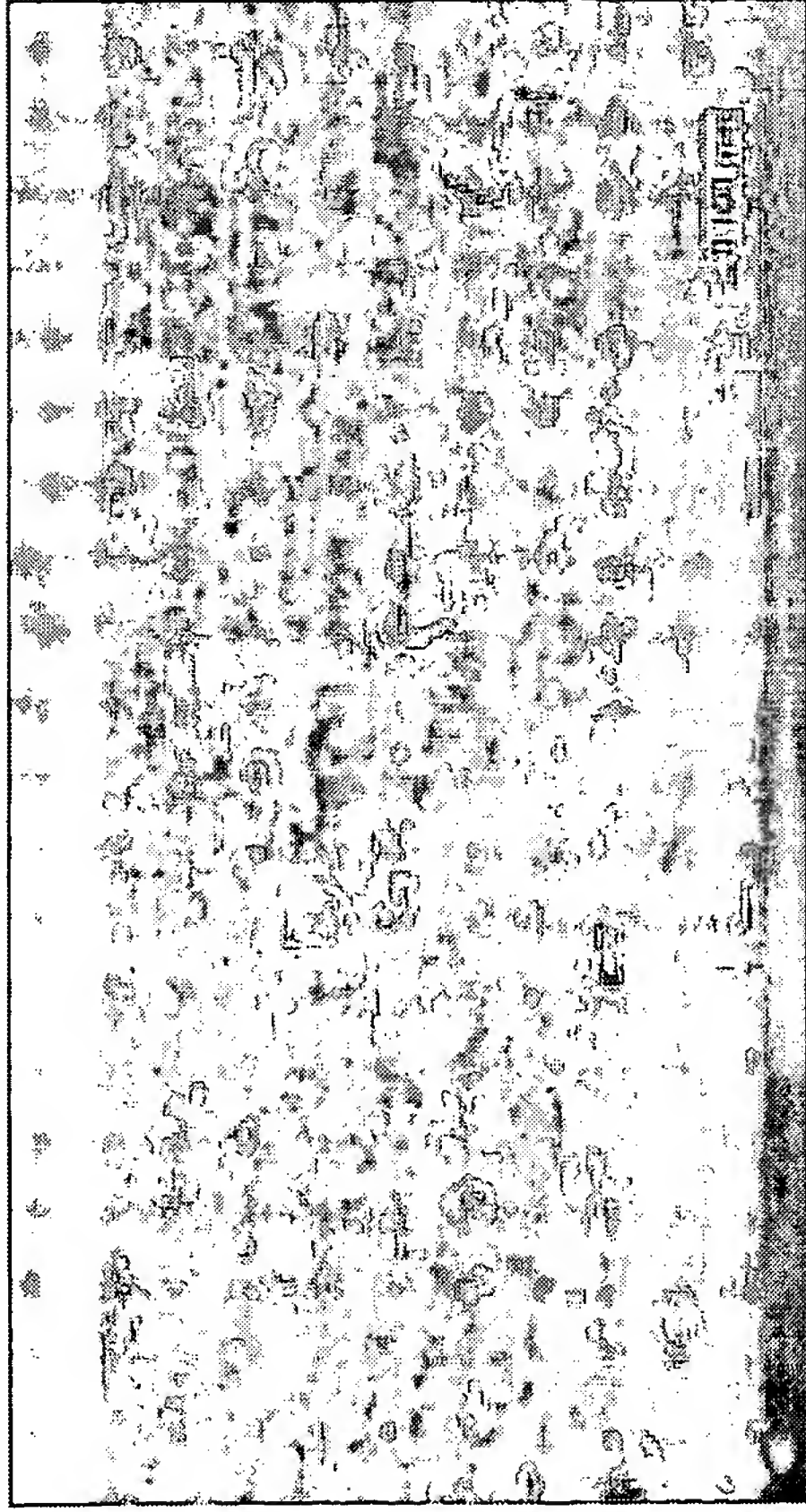
Method A: Enlarged View of TEM Image  
(Nano Uniform Dispersion)

Fig. 4A3

Method A: Enlarged View of SEM Image  
(Nano Uniform Dispersion)

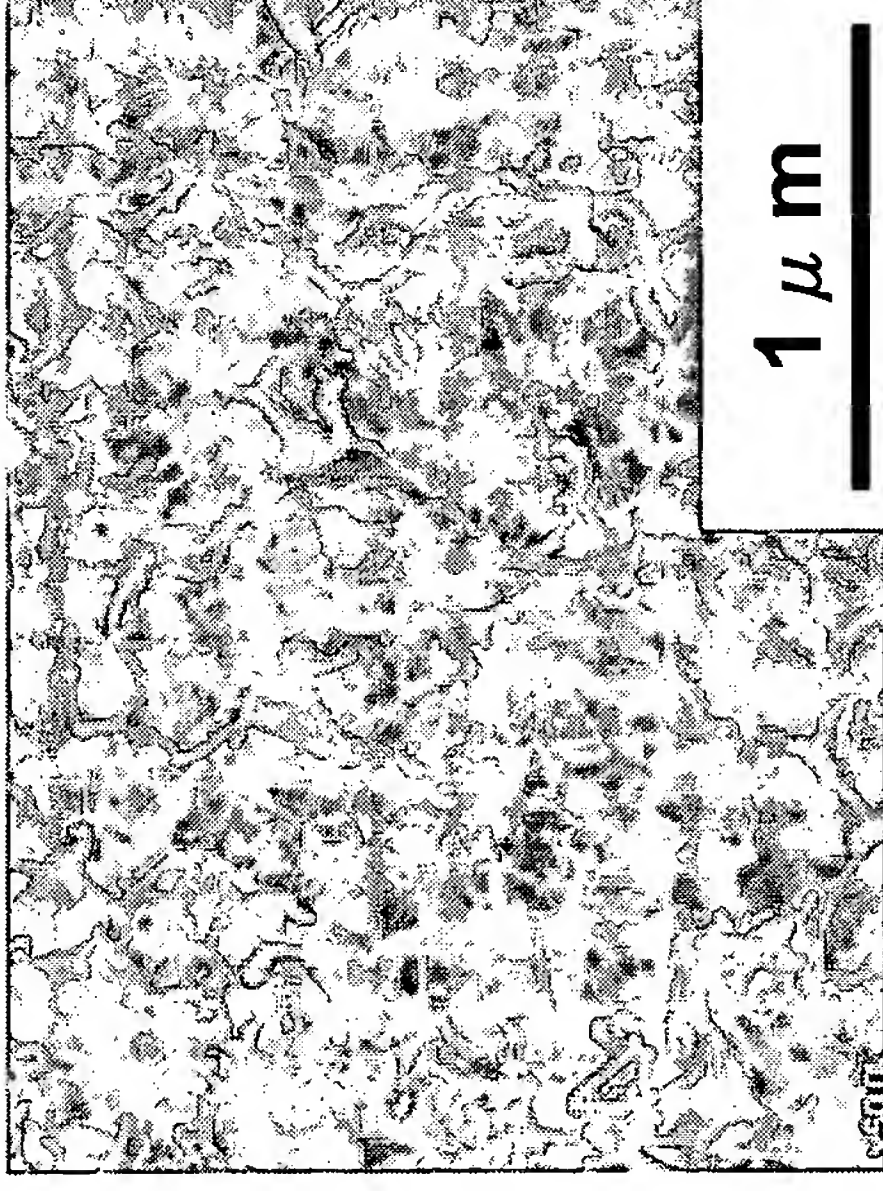


Fig. 4B1

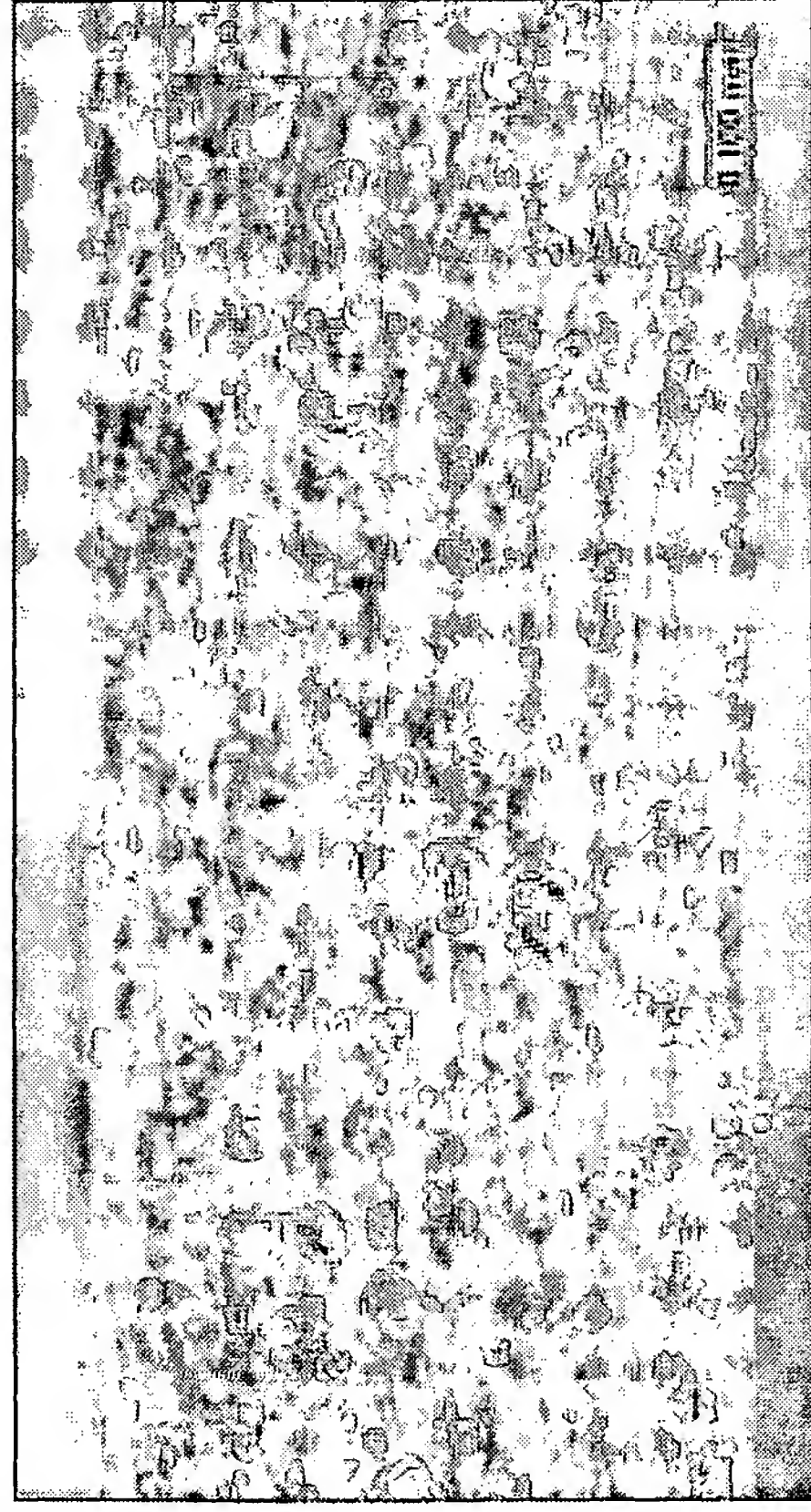


Method B: Overview of Mix Sheet (Optical Microscopic Images; White Scale=100 $\mu$ m)  
Macro Nonuniform Dispersion

Fig. 4B2



Method B: Enlarged View of SEM Image  
of Island-Shaped Portions



Method C: Overview of Mix Sheet  
(Optical Microscopic Images; White  
Scale=100 $\mu$ m)  
Macro Nonuniform Dispersion

Fig. 4C

**Comparison of CNT/EPDM Composites prepared by  
Method A (Claimed Mixing Method) and General Mixing Methods B and C**

MIXERS	MIXING	$T_B$ [MPa]	$E_B$ [%]	$T_{2n}$ (150°C) $\mu$ sec	$T_{2nn}$ (150°C) $\mu$ sec	$F_{nn}$ (150°C)
METHOD A (Using Rolls)	Room Temp/10min +100°C/10min +20°C Tight milling observed 5times	7.1	207	1860	6100	0.18
METHOD B (Using Labo Plastmill)	100°C 3 Cycles (Temperature Rise of up to 180°C)	4.4	143	3200	12000	0.25
METHOD C (Using Twin Screw Extruder)	100°C 10min (Temperature Rise of up to 180°C)	4.8	151	3900	17000	0.31

TABLE 1